

## Sequence Listing

<110> JAPAN ATOMIC ENERGY RESEARCH INSTITUTE

<120> PLANT PIGMENT ACCUMULATION GENE

<130> 030385

<150> JAPAN, 2003-066310

<151> MARCH 12, 2003

<160> 33

<210> 1

<211> 645

<212> DNA

<213> Arabidopsis thaliana

<220>

<223> Sequence of TT19 gene cDNA

<400> 1

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atggttgtga aactatatgg acaggtaaca gcagcttgic cacaaagagt ctgtctttgt 60
tttctcgaga aaggaattga atttgagatt attcatatcg atcttgatac atttgagcaa 120
aaaaaaccag aacatcttct tcgtcagcca ttiggicaag ttccagccat agaagatgga 180
gatttcaagc ttttgaatc acgagccatc gcgagatact acgtaccaa gticgcggac 240
caaggcacga accttttggg caagtctcta gagcaccgag ccatcgtgga ccagtgggct 300
gacgtggaga cctattactt caacgttctg gcccaacccc tcgtgattaa cctaatactc 360
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aagcctaggt taggcgagaa atgtgacgtc gttttggctc aggatctcaa agtgaagcta 420  
ggagtggctc tggacatata caataaccgg ctttcttcga accggttttt ggctggigaa 480  
gaattcacta tggctgatit gacgcacatg ccggcgaatg ggtacttgat gagtataacc 540  
gatataaacc agatgggttaa ggctcggggg agttttaacc ggtgggtggga agagatttcg 600  
gatagaccgt ctiggaagaa gcttatgggt ctggctgggt actga 645

<210> 2

<211> 214

<212> PRT

<213> Arabidopsis thaliana

<220>

<223> Putative amino acid sequence of TT19

<400> 2

Met	Val	Val	Lys	Leu	Tyr	Gly	Gln	Val	Thr	Ala	Ala	Cys	Pro	Gln	Arg
			5					10						15	
Val	Leu	Leu	Cys	Phe	Leu	Glu	Lys	Gly	Ile	Glu	Phe	Glu	Ile	Ile	His
			20					25						30	
Ile	Asp	Leu	Asp	Thr	Phe	Glu	Gln	Lys	Lys	Pro	Glu	His	Leu	Leu	Arg
			35					40						45	
Gln	Pro	Phe	Gly	Gln	Val	Pro	Ala	Ile	Glu	Asp	Gly	Asp	Phe	Lys	Leu
			50					55						60	
Phe	Glu	Ser	Arg	Ala	Ile	Ala	Arg	Tyr	Tyr	Ala	Thr	Lys	Phe	Ala	Asp
			65					70						75	
Gln	Gly	Thr	Asn	Leu	Leu	Gly	Lys	Ser	Leu	Glu	His	Arg	Ala	Ile	Val
			85					90						95	
Asp	Gln	Trp	Ala	Asp	Val	Glu	Thr	Tyr	Tyr	Phe	Asn	Val	Leu	Ala	Gln

100	105	110
Pro Leu Val Ile Asn Leu Ile Ile Lys Pro Arg Leu Gly Glu Lys Cys		
115	120	125
Asp Val Val Leu Val Glu Asp Leu Lys Val Lys Leu Gly Val Val Leu		
130	135	140
Asp Ile Tyr Asn Asn Arg Leu Ser Ser Asn Arg Phe Leu Ala Gly Glu		
145	150	155
Glu Phe Thr Met Ala Asp Leu Thr His Met Pro Ala Met Gly Tyr Leu		
165	170	175
Met Ser Ile Thr Asp Ile Asn Gln Met Val Lys Ala Arg Gly Ser Phe		
180	185	190
Asn Arg Trp Trp Glu Glu Ile Ser Asp Arg Pro Ser Trp Lys Lys Leu		
195	200	205
Met Val Leu Ala Gly His		
210		

<210> 3

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f0, which is used for amplifying TT19 genomic region by PCR.

<400> 3

gagaacccca aaaacgtcac

20

<210> 4

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r0, which is used for amplifying TT19 genomic region by PCR.

<400> 4

gttgtgaggg ttgggtagaa 20

<210> 5

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f1, which is used for amplifying TT19 genomic region by PCR.

<400> 5

gtggttggttg ggaagagaag 20

<210> 6

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r1, which is used for amplifying TT19 genomic region by PCR.

<400> 6

cgatggctcg tgattcttag 20

<210> 7

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f2, which is used for amplifying TT19 genomic region by PCR.

<400> 7

ggtcaagttc cagccataga 20

<210> 8

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r2, which is used for amplifying TT19 genomic region by PCR.

<400> 8

agcgagagga aagtggaaca 20

<210> 9

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-f3, which is used for amplifying TT19 genomic region by PCR.

<400> 9

ccctcattag gccaaagagaa 20

<210> 10

<211> 20

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-r3, which is used for amplifying TT19 genomic region by PCR.

<400> 10

gagcttatgt ggggaaagtc 20

<210> 11

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-R4, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 11

atcaagtacc ccatcgccgg catgt 25

<210> 12

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-R5, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 12

ggcatgtgcg tcaaatcagc catag 25

<210> 13

<211> 25

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-R6, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 13

aaccggttcg aagaaagccg gttat

25

<210> 14

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-F7, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 14

atatggacag gtaacagcag cttgtc

26

<210> 15

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-F8, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 15

gcagcttgct cacaaagagt cttgct

26

<210> 16

<211> 26

<212> DNA



<213> Artificial sequence

<220>

<223> Nested primer designated as MKP11-F9, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 16

gctttgtttt ctcgagaaag gaattg 26

<210> 17

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as bCC5-8-R1, which is used in TAIL-PCR in tt19-2 mutant.

<400> 17

gacgtcacat ttctgccta acct 24

<210> 18

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as bCC5-8-R2, which is used in TAIL-PCR in tt19-2 mutant.

<400> 18

gaggggttgg gccagaacgt tgaa 24

<210> 19

<211> 24

<212> DNA

<213> Artificial sequence

<220>

<223> Nested primer designated as bCC5-8-R3, which is used in  
TAIL-PCR in tt19-2 mutant.

<400> 19

cgatggctcg gtgctctaga gact 24

<210> 20

<211> 16

<212> DNA

<213> Artificial sequence

<220>

<223> Degenerate AD primer (AD2) for amplifying the rearranged DNA  
segments.

<400> 20

ngtcgaswga nawgaa 16

<210> 21

<211> 16

<212> DNA

<213> Artificial sequence

<220>

<223> Degenerate AD primer (AD3) for amplifying the rearranged DNA segments.

<400> 21

wgtgnagwan canaga 16

<210> 22

<211> 16

<212> DNA

<213> Artificial sequence

<220>

<223> Another AD primer (AD1) for amplifying the rearranged DNA segments.

<400> 22

gtncgaswca nawgtt 16

<210> 23

<211> 30

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-RT/f2 which is used in RT-PCR method.

<400> 23

gaacatcttc ttcgtcagcc atttggtcaa 30

<210> 24

<211> 31

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as TT19-RT/r1 which is used in RT-PCR method.

<400> 24

ggttcttcag atcatcataa attggagcta 31

<210> 25

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHS-UP which is used in RT-PCR method.

<400> 25

atggctgggtg cttcttcttt gg 22

<210> 26

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHS-RP which is used in RT-PCR method.

<400> 26

tctctccgac agatgtgtca gg 22

<210> 27

<211> 21

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3'H-UP which is used in RT-PCR method.

<400> 27

catggcaact ctatttctca c 21

<210> 28

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3'H-RP which is used in RT-PCR method.

<400> 28

cgtcacccgtc aagatcagtt cc 22

<210> 29

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as DFR-UP which is used in RT-PCR method.

<400> 29

atggtttagtc agaaagagac cg 22

<210> 30

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as DFR-RT/r1 which is used in RT-PCR method.

<400> 30

gacacgaaat acatccatcc tg 22

<210> 31

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHI-f1, which is used for amplifying CHI gene.

<400> 31

ctcaacaatg tcttcatcca acgcct 26

<210> 32

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as CHI-r1, which is used for amplifying CHI gene.

<400> 32

cgaaaacgca accgtaagag ag 22

<210> 33

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3H-f1, which is used for amplifying F3H gene.

<400> 33

gccggagagt ctaagctcaa ct 22

<210> 34

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as F3H-r1, which is used for amplifying F3H gene.

<400> 34

ccacggcctg atgatacagca tt 22

<210> 35

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as LDOX-f2, which is used for amplifying LDOX gene.

<400> 35

gatggtttgcg gttgaaagag tt 22

<210> 36

<211> 22

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as LDOX-r2, which is used for amplifying LDOX gene.



<400> 36

aaagcgctta catcggtgtg ag 22

<210> 37

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as AN9-5', which is used for amplifying AN9 gene.

<400> 37

ggatccatgg ttgtgaaagt gcatgg 26

<210> 38

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Primer designated as AN9-3', which is used for amplifying AN9 gene.

<400> 38

gagctcgctcc cgtactccac aacaat 26